30. The method of claim 29 that includes generating data related to the amplitude of said auxiliary signal at different locations.

31. The method of claim 30 that includes generating a spatial map of the amplitude of the auxiliary signal.

32. The method of claim 29 in which the alteration comprises the substitution of new data. --

REMARKS

After entry of the foregoing amendment, claims 1-32 are pending in the application.

Priority Claim

The Examiner is thanked for his careful checking of the priority claim, and his noting of the co-pendency error. Applicant has amended the priority claims using some of the Examiner's suggestions, but dropping the reliance on five applications filed on May 8, 1995, as part of the chain. Instead, of the May 8, 1995 applications, only 08/436,134 (now Patent 5,748,763), is included in the priority chain. That application enjoyed co-pendency with, and priority to application 08/327,426, making the priority claim proper.

As to the need for priority back before 1995, applicant respectfully notes that the March, 1994, specification taught use of the technology in connection with identification cards, such as driver's licenses. It noted:

> Use of the Invention in Printing, Paper, Documents, Plastic Coated Identification Cards, and Other Material Where Global Embedded Codes Can Be Imprinted
>
> [1] The term 'signal' in the title of the disclosure is often used narrowly to refer to digital data information, audio signals, images, etc. A broader interpretation of 'signal,' and the one more generally intended, includes any form of modulation of any material whatsoever. Thus, the micro-topology of a piece of common paper becomes a 'signal'

(e.g. it height as a function of x-y coordinates). The reflective properties of a flat piece of plastic (as a function of space also) becomes a signal. The point is that photographic emulsions, audio signals, and digitized information are not the only types of signals capable of utilizing the principles of the invention.

[2] As a case in point, a machine very much resembling a braille printing machine can be designed so as to imprint unique 'noise-like' indentations as outlined in the disclosure. These indentations can be applied with a pressure which is much smaller than is typically applied in creating braille, to the point where the patterns are not noticed by a normal user of the paper. But by following the steps of the present disclosure and applying them via the mechanism of micro-indentations, a unique identification code can be placed onto any given sheet of paper, be it intended for everyday stationary purposes, or be it for important documents, legal tender, or other secured material.

[3] The reading of the identification material in such an embodiment generally proceeds by merely reading the document optically at a variety of angles. This would become an inexpensive method for deducing the micro-topology of the paper surface. Certainly other forms of reading the topology of the paper are possible as well.

[4] In the case of plastic encased material such as **identification cards, e.g. driver's licenses**, a similar braille-like impressions machine can be utilized to imprint unique identification codes. Subtle layers of photoreactive materials can also be embedded inside the plastic and 'exposed.'

[5] It is clear that wherever a material exists which is capable of being modulated by 'noise-like' signals, that material is an appropriate carrier for unique identification codes and utilization of the principles of the invention. The trick becomes one of economically applying the identification information and maintaining the signal level below an acceptability threshold which each and every application will define for itself.

It was well understood that a driver's license (referenced in paragraph [4]) includes a photograph of the owner.

Paragraph [4] was included to show that a wide range of elements and materials – in addition to images – can be encoded in accordance with the disclosed technology. (The emphasis of the remainder of the specification is on image and photograph encoding.) Given the explicit teaching that identification cards can be encoded, the

repeated teaching of photo encoding elsewhere in the spec, and the teaching in paragraph [5] that "*It is clear that wherever a material exists which is capable of being modulated by 'noise-like' signals, that material is an appropriate carrier for unique identification codes and utilization of the principles of the invention,*" applicant submits that the specification fairly teaches that the photos of driver's licenses and other identification cards can be encoded.

Accordingly, applicant submits that the subject matter of claim 17 (and new claims 18-32), meet the statutory standards at least as early as the March, 1994, specification.

New Claims

New claims 18-32 are submitted to more fully protect applicant's inventive work.

Claims 18-21 are supported by the earlier-quoted excerpt from the March, 1994, priority case. Claims 22-24 are supported by other portions of that specification.

Claims 25-32 are modeled after claims issued in applicant's patent 6,289,108. Applicant would be willing to enter a Terminal Disclaimer over this patent, if the claims are otherwise in condition for allowance. (Support for claims 25-32 is found, e.g., in the section entitled *Specific Example*, which begins with the sentence, "Imagine that we have taken a valuable picture of two heads of state at a cocktail party...," and in the section entitled *Use and Improvements of the Invention in the Detection of Signal or Image Alteration.* These sections are found in columns 8 and 15, respectively, of applicant's patent 5,768,426, and were also present in applicant's now-abandoned March, 1994 filing).

Art-Based Rejections

Claims 1-4, 6-7 and 16-17 stand rejected as anticipated by Kawakami (EP 642060). Other claims are rejected as obvious over Kawakami and other art.

Kawakami was published in March, 1995. Accordingly, it is not believed to be prior art as to claim 17 (or 18-32) for the reasons stated above.

(Applicant notes that an apparent U.S. counterpart of Kawakami is US 5,652,626, submitted herewith. It shows a U.S. filing date of September 2, 1994 – still rendering it unavailable as art against subject matter from applicant's March, 1994 specification.)

Applicant has amended claim 1 to specify that the encoding is locally scaled in amplitude in accordance with features of the graphic. Kawakami does not appear to contemplate such an arrangement.

Since each of claims 2-26 depends from claim 1, these claims are believed to be similarly allowable. (In view of this reason for allowance, applicant does not belabor this response by addressing points concerning certain of the dependent claims about which there is a difference of understanding.)

IDS

Submitted herewith is an IDS listing US patents 5,337,361 (Wang), 5,652,626 (Kawakami), and 6,289,108 (Rhoads – with claims on which new claims 25-32 were based), 5,768,426 (Rhoads, included in priority claim), 5,319,453 (Copriviza, relied-on by the Office in prosecution of the '108 Rhoads patent), 5,379,345 (Greenberg – relied-on by the Office in the '108 prosecution), 5,646,997 (Barton, cited in the '108 patent), EP 629972 (Mahon, cited in the '108 patent), 5,721,788 (Powell, relied-on by the Office in the '108 prosecution) and Szepanski (1979 Carnahan paper).

Favorable consideration and passage to allowance are requested.

Date: February 8, 2002

23735
PATENT TRADEMARK OFFICE

Phone: 503-885-9699
FAX: 503-885-9880

Respectfully submitted,

DIGIMARC CORPORATION

By_____
William Y. Conwell
Registration No. 31,943